

**METHOD FOR EXTENDED SELF-PINNED LAYER FOR A CURRENT  
PERPENDICULAR TO PLANE HEAD**

**ABSTRACT**

A Giant Magneto-Resistive (GMR) sensor (900) having Current Perpendicular to Plane (CPP) structure is formed providing an extended first pinned layer (914) as compared to second pinned layer (912) and free layer (910). Increased magnetoresistance changes, increased pinning strength, increased thermal stability, and decreased susceptibility to Electro-Static Discharge (ESD) events is realized by maintaining equivalent current densities through free layer (910) and second pinned layer (912), while decreasing the relative current density through first pinned layer (914).